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# DESCRIPTION OF INVENTION
## FOR CERTIFICATE OF AUTHORSHIP

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(71) Leningrad Scientific and Research Pediatric Orthopedic Institute named after G.I.Turner
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(56) Microsurgery in the Management of Irreversible Injuries of the Forearm. Abstract of Candidate of Medicine Thesis, Moscow, 1988, page 37.

(54) A METHOD OF MANAGEMENT OF SEQUELAE OF INTRANATAL TRAUMA OF BRACHIAL PLEXUS

(57) The present invention refers to medicine, specifically to pediatric orthopedics. The purpose of the present invention is to restore the arm abduction function in infants. Substance of the invention: a skin-muscle graft is formed from the latissimus dorsi muscle on a non-free neurovascular pedicle; proximal end of the graft is incised longitudinally; the graft is replanted as follows: split ends are attached to the clavicle and to supraspinate scapule, the distal end is attached to the radius near the biceps brachii attachment point. Restoration of arm function enables the patient to take care of himself.

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The purpose of the present invention is to restore the arm abduction function in infants.

The invention is implemented as follows.

Skin incision is performed on the lateral surface of the chest from the axilla along the lateral margin of the scapula; thoracodorsal neurovascular bundle is mobilized to form the pedicle of the musculocutaneous graft. The musculocutaneous graft is prepared and formed taking into account the length of the humerus. Via epaulet incision on the shoulder girdle, the middle third of the clavicle and the trapezoid muscle are uncovered. The incision is continued along the humerus to the point of fixation of biceps tendon to the radius. Tendomuscular ventricle of the pertocalis major muscle is prepared and elongated by a Z-incision. Musculocutaneous graft on non-free neurovascular pedicle is replanted to the biceps muscle of the arm position. Proximal end of the latissimus dorsi is preliminarily split longitudinally to some extent. The split ends are attached to the clavicle and to the supraspinate part of the scapula; the distal end is attached to the radius near the point of fixation of the biceps muscle of the arm. The arm is then immobilized for 3-4 weeks with a thoracobrachial bandage at 90° abduction and 20-30° anterior adduction.

The present method is illustrated by the following example.

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Patient B. was hospitalized for sequelae of bilateral intranatal trauma to the brachial plexus, more marked on the left. Following complex medical treatment a partial restoration of function of the arms occurred. However, marked limitation of active function of the left shoulder joint and the left elbow joint persisted. Atrophy and segment shortening of the left arm was present. Abduction and flexion of the shoulder was limited to 25-30°, active elbow flexion was limited to 140°. Paresis of deltoid and triceps muscles was noted. The functions of forearm and wrist muscles were normal. A musculocutaneous graft of the latissimus dorsi on a non-free neurovascular pedicle was transferred to the position of deltoid and biceps muscles. 4 weeks after the surgery arm immobilization was still maintained during sleep hours for another 4 weeks. Physical training, massage, electrical stimulation of the muscle graft and other types of physical treatment were administered. Follow-up examination at long term revealed active abduction and flexion of the arm to 50°, active flexion of the elbow to 90°.

Thus, the present method ensures restoration of active abduction of the shoulder by preserved biomechanical principle of function of the latissimus muscle.

*Summary of Invention*

A method of management of sequelae of intranatal trauma by transplantation of a latissimus dorsi graft, distinguished by the way of achieving restoration of the active shoulder abduction function, which consists of additional separation of graft and neurovascular bundle, incision of the proximal part of this musculocutaneous graft on a non-free neurovascular pedicle and attachment of the graft to middle third of the clavicle, to supraspinate part of the scapula and the distal end - to tendinous part of biceps muscle of arm.

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